DL9600 Viper™

User's Manual

DATALOGIC

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DL9600 Viper™- User's Manual

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REFERENCES

CONVENTIONS

This manual uses the following conventions:

“User” refers to anyone using a DL9600 Viper™.
“Device” refers to the DL9600 Viper™.
“You” refers to the System Administrator or Technical Support person using this manual to install, mount, operate, maintain or troubleshoot a DL9600 Viper™.

REFERENCE DOCUMENTATION

For further details refer to the Development System Manual of DS for Mobile@work.

SERVICE, SUPPORT AND WARRANTY

Datalogic provides several services as well as technical support through its website. Log on to www.datalogic.com/services/support and click on the links indicated for further information including:

- **Services – Warranty Extensions and Maintenance Agreements**
- **Support – Software Driver Downloads**
- **Contact Us – Listing of Datalogic Subsidiaries and Quality Partners**
- **Authorised Repair Centres**

SAFETY REGULATIONS

NOTE

Read this manual carefully before performing any type of connection to the DL9600 Viper™ terminal.
The user is responsible for any damages caused by incorrect use of the equipment or by inobservance of the indication supplied in this manual.

GENERAL SAFETY RULES

- Use only the components supplied by the manufacturer for the specific DL9600 Viper™ terminal being used. The use of cradles other than those supplied with the DL9600 Viper™ terminal or indicated in the list in the appendix could cause serious damage to the DL9600 Viper™ terminal.
- Do not attempt to disassemble the DL9600 Viper™ terminal, as it does not contain parts that can be repaired by the user. Any tampering will invalidate the warranty.
- When replacing the batteries or at the end of the operative life of the DL9600 Viper™ terminal, disposal must be performed in compliance with the laws in force.
- Do not submerge the DL9600 Viper™ terminal in liquid products.

LASER SAFETY

The laser light is visible to the human eye and is emitted from the window indicated in the figure.

This product complies with 21 CFR Subchapter J
CAUTION - CLASS 2 LASER LIGHT WHEN OPEN DO NOT STARE INTO BEAM
AVOID EXPOSURE LASER LIGHT IS EMITTED FROM THIS APERTURE
LASER LIGHT - DO NOT STARE INTO BEAM
CLASS 2 LASER PRODUCT
MAX. OUTPUT RADIATION 1.4 mW - EMITTED WAVE LENGTH 630~680 nm
EN60825-1:2001
Laser output window
Model No. DL9600 XXXXXXX
S/N.
DATALOGIC S.P.A.
Via Candini, 2
Calderara di Reno (BO)
Italy
N2468

I	D	F	E
La luce laser è visibile all'occhio umano e viene emessa dalla finestra indicata nella figura.	Die Laserstrahlung ist für das menschliche Auge sichtbar und wird am Strahlaustrittsfenster ausgesendet (siehe Bild).	Le rayon laser est visible à l'oeil nu et il est émis par la fenêtre désignée sur l'illustration dans la figure.	La luz láser es visible al ojo humano y es emitida por la ventana indicada en la figura.
LUCE LASER NON FISSARE IL FASCIO APPARECCHIO LASER DI CLASSE 2 MINIMA POTENZA DI USCITA: LUNGHEZZA D'ONDA EMESSA: CONFORME A EN 60825-1 (2001)	LASERSTRAHLUNG NICHT IN DER STRAHL BLINKEN PRODUKT DER LASERKLASSE 2 MAXIMALE AUSGANGLEISTUNG: WELLENLÄNGE: ENTSPR. EN 60825-1 (2001)	RAYON LASER EVITER DE REGARDER LE RAYON APPAREIL LASER DE CLASSE 2 PUISSANCE DE SORTIE: LONGUER D'ONDE EMISE: CONFORME A EN 60825-1 (2001)	RAYO LÁSER NO MIRAR FIJO EL RAYO APARATO LÁSER DE CLASE 2 MÁXIMA POTENCIA DE SALIDA: LONGITUD DE ONDA EMITIDA: CONFORME A EN 60825-1 (2001)

ENGLISH

The following information is provided to comply with the rules imposed by international authorities and refers to the correct use of your terminal.

STANDARD LASER SAFETY REGULATIONS
This product conforms to the applicable requirements of both CDRH 21 CFR 1040 and EN 60825-1 at the date of manufacture.
For installation, use and maintenance, it is not necessary to open the device.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in exposure to hazardous visible laser light.

The product utilizes a low-power laser diode. Although staring directly at the laser beam momentarily causes no known biological damage, avoid staring at the beam as one would with any very strong light source, such as the sun. Avoid that the laser beam hits the eye of an observer, even through reflective surfaces such as mirrors, etc.

ITALIANO

Le seguenti informazioni vengono fornite dietro direttive delle autorità internazionali e si riferiscono all'uso corretto del terminale.

NORMATIVE STANDARD PER LA SICUREZZA LASER
Questo prodotto risulta conforme alle normative vigenti sulla sicurezza laser alla data di produzione: CDRH 21 CFR 1040 e EN 60825-1.
Non si rende mai necessario aprire l'appa-recchio per motivi di installazione, utilizzo o manutenzione.

ATTENZIONE

L'utilizzo di procedure o regolazioni differenti da quelle descritte nella documentazione può provocare un'esposizione pericolosa a luce laser visibile.

Il prodotto utilizza un diodo laser a bassa potenza. Sebbene non siano noti danni riportati dall'occhio umano in seguito ad una esposizione di breve durata, evitare di fissare il raggio laser così come si eviterebbe qualsiasi altra sorgente di luminosità intensa, ad esempio il sole. Evitare inoltre di dirigere il raggio laser negli occhi di un osservatore, anche attraverso superfici riflettenti come gli specchi.

DEUTSCH

Die folgenden Informationen stimmen mit den Sicherheitshinweisen überein, die von internationalen Behörden auferlegt wurden, und sie beziehen sich auf den korrekten Gebrauch vom Terminal.

NORM FÜR DIE LASERSICHERHEIT
Dies Produkt entspricht am Tag der Herstellung den gültigen EN 60825-1 und CDRH 21 CFR 1040 Normen für die Lasersicherheit.
Es ist nicht notwendig, das Gerät wegen Betrieb oder Installations-, und Wartungs-arbeiten zu öffnen.

ACHTUNG

Jegliche Änderungen am Gerät sowie Vorgehensweisen, die nicht in dieser Betriebsanleitung beschrieben werden, können ein gefährliches Laserlicht verursachen.

Der Produkt benutzt eine Laserdiode. Obwohl zur Zeit keine Augenschäden von kurzen Einstrahlungen bekannt sind, sollten Sie es vermeiden für längere Zeit in den Laserstrahl zu schauen, genauso wenig wie in starke Lichtquellen (z.B. die Sonne). Vermeiden Sie es, den Laserstrahl weder gegen die Augen eines Beobachters, noch gegen reflektierende Oberflächen zu richten.

FRANÇAIS

Les informations suivantes sont fournies selon les règles fixées par les autorités internationales et se refèrent à une correcte utilisation du terminal.

NORMES DE SECURITE LASER
Ce produit est conforme aux normes de sécurité laser en vigueur à sa date de fabrication: CDRH 21 CFR 1040 et EN 60825-1.
Il n'est pas nécessaire d'ouvrir l'appareil pour l'installation, l'utilisation ou l'entretien.

ATTENTION

L'utilisation de procédures ou réglages différents de ceux donnés ici peut entrainer une dangereuse exposition à lumière laser visible.

Le produit utilise une diode laser. Aucun dommage aux yeux humains n'a été constaté à la suite d'une exposition au rayon laser. Eviter de regarder fixement le rayon, comme toute autre source lumineuse intense telle que le soleil. Eviter aussi de diriger le rayon vers les yeux d'un observateur, même à travers des surfaces réfléchissantes (miroirs, par exemple).

ESPAÑOL

Las informaciones siguientes son presentadas en conformidad con las disposiciones de las autoridades internacionales y se refieren al uso correcto del terminal.

NORMATIVAS ESTÁNDAR PARA LA SEGURIDAD LÁSER
Este aparato resulta conforme a las normativas vigentes de seguridad láser a la fecha de producción: CDRH 21 CFR 1040 y EN 60825-1.
No es necesario abrir el aparato para la instalación, la utilización o la manutención.

ATENCIÓN

La utilización de procedimientos o regulaciones diferentes de aquellas describidas en la documentción puede causar una exposición peligrosa a la luz láser visible.

El aparato utiliza un diodo láser a baja potencia. No son notorios daños a los ojos humanos a consecuencia de una exposición de corta duración. Eviten de mirar fijo el rayo láser así como evitarían cualquiera otra fuente de luminosidad intensa, por ejemplo el sol. Además, eviten de dirigir el rayo láser hacia los ojos de un observador, también a través de superficies reflectantes como los espejos.

RADIO COMPLIANCE

In radio systems configured with portable terminals and access points, the frequencies to be used must be allowed by the spectrum authorities of the specific country in which the installation takes place. Be absolutely sure that the system frequencies are correctly set to be compliant with the spectrum requirements of the country.
The Radio Card used in this product automatically adapts to the frequencies set by the system and does not require any parameter settings.

NOTE

For RadioReady versions, the correct conformity label for your radio model must be applied to the DL9600 Viper™ terminal to indicate that the terminal is in conformity with the directives related to the DL9600 Viper™/RF version.

Information for the User

ENGLISH

Contact the competent authority responsible for the management of radio frequency devices of your country to verify the eventual necessity of a user license. Refer to the web site http://europa.eu.int/comm/enterprise/rtte/spectr.htm for further information.

ITALIANO

Prendi contatto con l'autorità competente per la gestione degli apparati a radio frequenza del tuo paese, per verificarne l'eventuale necessità della licenza d'uso. Inoltre puoi trovare ulteriori informazioni al sito:
http://europa.eu.int/comm/enterprise/rtte/spectr.htm.

FRANÇAIS

Contactez l'autorité compétente en la gestion des appareils à radio fréquence de votre pays pour vérifier la nécessité du permis d'usage. Pour tout renseignement vous pouvez vous adresser au site web:
http://europa.eu.int/comm/enterprise/rtte/spectr.htm.

DEUTSCH

Um die Notwendigkeit der Verwendungslizenz zu prüfen, wenden Sie sich an die Behörde, die auf der Radiofrequenzgerätsführung Ihres Lands bewandert ist. Weitere Informationen sind verfügbar auf dem Web Site:
http://europa.eu.int/comm/enterprise/rtte/spectr.htm.

ESPAÑOL

Contacta con la autoridad competente para la gestión de los dispositivos de radio frecuencia de tu país, para verificar si es necesario la licencia de uso. Además se puede encontrar mas información en el sitio web:
http://europa.eu.int/comm/enterprise/rtte/spectr.htm.

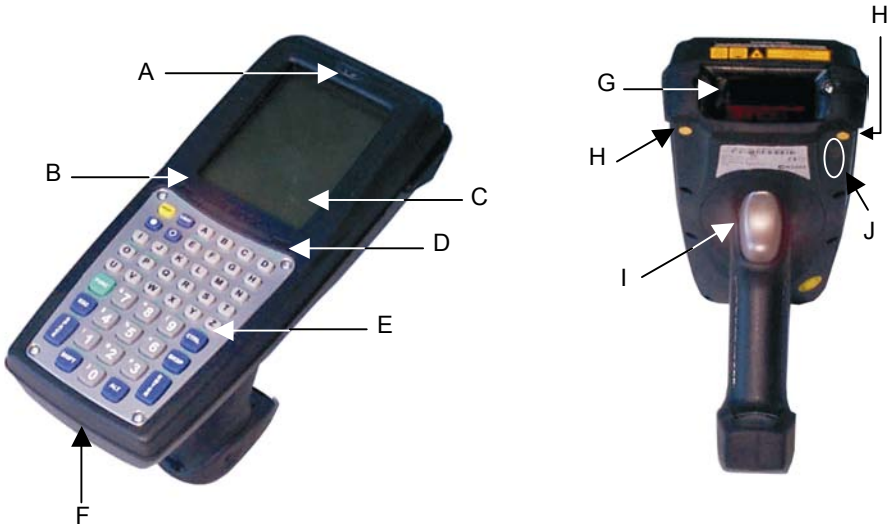
FCC COMPLIANCE

This compliance refers only to the DL9600 Viper™ batch version.

> *This device complies with PART 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference which may cause undesired operation.*

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

GENERAL VIEW



Key:

A) Good Read LED
B) Keyboard status/Battery low LED
C) Display
D) Charging status LED
E) Keyboard
F) Connector for direct RS232 connection and battery charging
G) Laser beam output window
H) Recharge contacts for CC9600 cradle
I) Trigger
J) IrDA port

1 INTRODUCTION

1.1 DL9600 VIPER™ TERMINAL DESCRIPTION

Belonging to the Datalogic *Mobile@work*™ family of rugged portable terminals, the **DL9600** Viper™ is a powerful pistol grip terminal, based on PC-like architecture and *RadioReady* concept. Viper™ has been conceived to match the demanding requirements of harsh environments found in industrial applications, with no compromises in terms of reliability and robustness. For this reason its state-of-the-art technology is completely protected from mechanical shocks and sealed against water and dust penetration.

Built to be an open system, Viper™ supports the most widespread mobile standards, such as IEEE 802.11b and OpenAir, depending on the PC card used making communication management extremely straightforward in both new and existing installations.

The various laser scanning models offer excellent reading features including a 2D code model that is optimized for aggressive performance on high-density PDF417 labels, RSS and other 2-D symbols including Composite Codes, and Micro PDF.

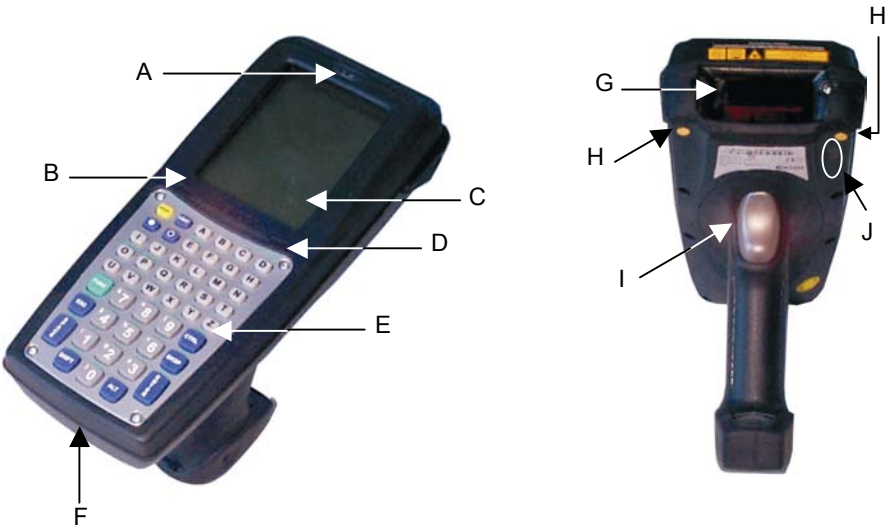
Furthermore, an innovative user interface, featuring one of the largest LCD display in existence on a pistol grip terminal, 1/4 VGA, and a spacious, intuitive keyboard, improves efficiency at the point of data collection.

In order to maximize functionality, Viper™ has been developed to be modular: batteries, keyboard, scanning engine and WLAN can be shaped to meet all the requirements of the application.

Since industrial environments are characterized by day-long use, Viper™ has been designed with the user in mind: lightweight and well balanced together with a hand-fitting shape provide the best user comfort in its product class.

Communication management to the legacy system takes advantage of the new software product line that includes terminal emulation connectivity for OS/400, Unix, Microsoft Windows platforms, including the most used ERPs, such as SAP R/3.

Viper™ is fully supported by the *Mobile@work*™ CD-ROM containing a vast assortment of Software Development Tools and Utility Programs included in the package.



Key:

A) Good Read LED
B) Keyboard status/Battery low LED
C) Display
D) Charging status LED
E) Keyboard
F) Connector for direct RS232 connection and battery charging
G) Laser beam output window
H) Recharge contacts for CC9600 cradle
I) Trigger
J) IrDA port

1.2 PACKAGE CONTENTS

The DL9600 terminal package contains:

- 1 DL9600 terminal;
- 1 user's manual and attached documentation;
- 1 CD-ROM Mobile@work containing Software Development System and Utility programs
- 1 rechargeable battery pack;
- Models including terminal emulation software may also include terminal-specific keyboard overlays.

Any other packages will contain the accessories necessary for the DL9600 terminal connection to the host computer and to the network: the cradle, power supply, and one or more connection cables.

Remove all the components from their packaging, check their integrity and congruity with the packing documents.

CAUTION

Keep the original packaging for use when sending products to the technical assistance center. Damage caused by improper packaging is not covered under the warranty.

NOTE

Rechargeable battery packs are not initially charged. Therefore the first operation to perform is to charge them. See paragraph 5.1.

1.3 ACCESSORIES

- **Cradle**

  94A154841 CC9600 Transceiver charger
  Battery charger and optical transceiver for connections between terminal and host computer in RS232 and RS485.

- **Charger**

  94A154840 MBC9600 multi-slot battery charger (4 slots)

- **Batteries**

  94ACC4661 B-9600 LI BATTERY PACK 1800 mAh@7.2 V
  94ACC4660 B-9600 NM BATTERY PACK 1000 mAh@7.2 V

- **Software**

  Twin Client Terminal emulation

- **Power Supply**

  FPS18 Power Supply for CC9600 transceiver charger, DL9600 terminal (through CAB-4001) and for the MBC9600 multi-slot battery charge r:

  94ACC4595 FPS18 power supply without cord

  94ACC1150 Power cord EU 3- pin

  94ACC1160 Power cord AUS 3- pin

  94ACC1170 Power cord USA 3- pin

  94ACC1180 Power cord UK 3- pin

- **Cables**

  94A054300 cable for RS232 direct connection between the terminal and the PC. It also provides a power jack for the connection to the FPS18.

  94A054000 cable for RS232 between the CC9600 cradle and a PC/AT or compatible.

  94A054010 cable for RS232 between the CC9600 cradle and a PC/XT or compatible.

  94A054030 kit consisting of two cables for Eavesdrop and Modem connection between cradle and Host.

2 CONNECTIONS

2.1 TERMINAL CONNECTION TO THE HOST COMPUTER

CAUTION

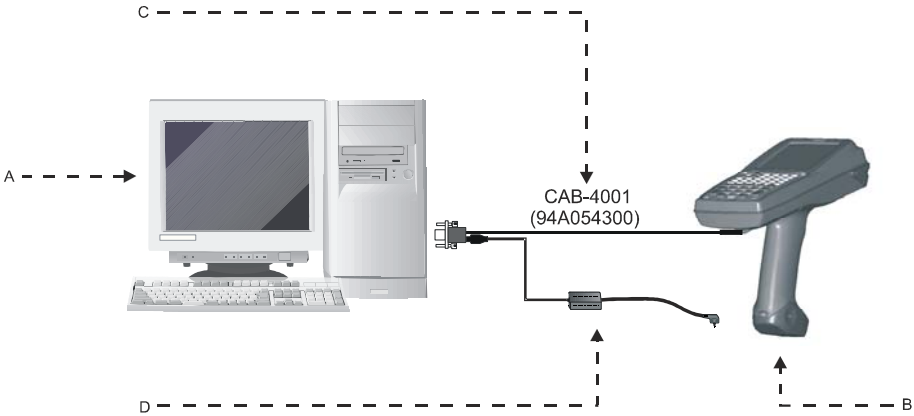
Before continuing with this phase be sure both the computer and the DL9600 terminal are turned off.

2.1.1 Connection Through CC9600 Cradle

The terminal can be connected to a Host through the CC9600 cradle by means of an RS232 interface (with or without an Eavesdrop line), or an RS485 Multidrop interface. See the CC9600 User Manual for details.

2.1.2 RS232 Direct Connection

You can use CAB-4001 to connect the DL9600 terminal to a host computer to transfer data.
This cable also allows connection to an external power supply to charge the batteries.

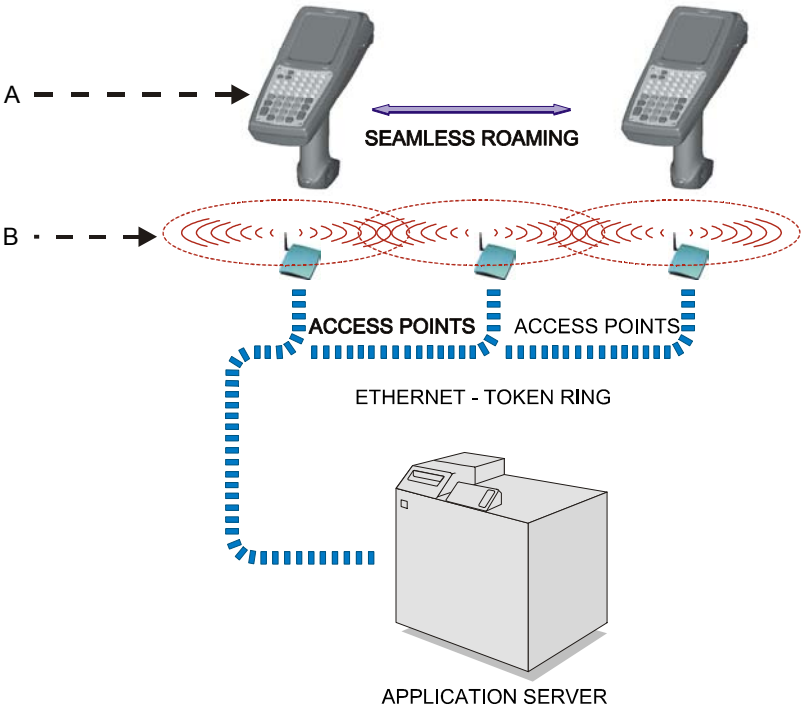


Key:

A) Host computer
B) DL9600 terminal
C) RS232 cable (CAB-4001)
D) Power supply

2.1.3 RF Connection

DL9600 RF versions can communicate with the host using the on-board radio frequency module and an Access Point connected to the host computer.



Key:

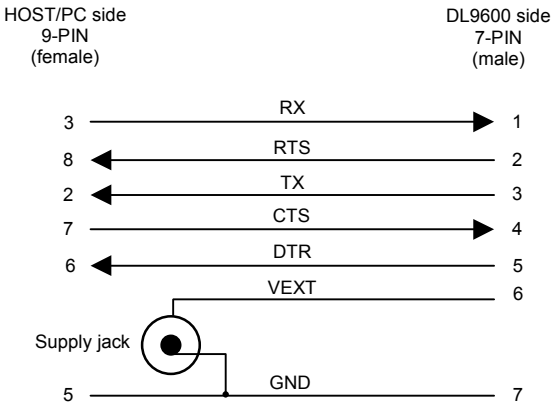
A) DL9600 terminal

B) Access point

2.2 CONNECTION CABLES

The following cable is listed with its order number.

- **RS232 Direct Connection: CAB-4001 (cable 94A054300)**



3 BIOS SETUP MENU

3.1 GENERAL INFORMATION

The DL9600 terminal is very versatile and can be adapted to suit many special requirements by configuring certain parameters which can be changed after the DL9600 terminal's boot sequence.

The activities of accessing the parameters and their modification are commonly referred to as DL9600 terminal setup activities.

The parameters have their default values, which are loaded automatically during the booting sequence if the following conditions occur:

- the first time the DL9600 terminal is booted, as initial setup of the parameters themselves;
- if, during the boot sequence, the BIOS notes that the previously-set configuration parameters might not be complete or correct.

3.2 ACTIVATING THE SETUP PROCEDURE

The DL9600 terminal reads and applies the setup parameters at bootup.

At first the terminal reads the parameters from the CMOS RAM. If the CMOS RAM is corrupted, the parameters are read from the EEPROM memory. If the EEPROM memory is corrupted too, default values are applied to all the parameters.

The BSETUP.EXE program is the only way to modify the DL9600 terminal parameters, it is a normal DOS program and can be invoked after the DL9600 terminal boot sequence. The parameter modifications made by BSETUP.EXE take effect at the next boot sequence.

BSETUP.EXE can be run with one of the following two options:

`BSETUP -C` the program checks the status of the CMOS. If the parameters are incorrect, it asks whether you want to modify them. Otherwise, the program exits. Default is no check.

`BSETUP -D` with this option you can load the DEFAULT configuration.

In the NEWAUTO.BAT file it is useful to invoke "BSETUP -C", so that if for some reasons the CMOS RAM is corrupted the user is notified.

3.3 PASSWORD

The password mechanism is used for protecting access to DL9600 terminal parameters. If BSETUP.EXE is run with the -C option, it will warn the user about an eventual CMOS corruption before asking for the password. No password is required to be warned about the CMOS memory.

The application recognizes two passwords which are case sensitive:

A) user defined

B) the string "degibkdr”

If the user forgets the password, the fixed (B) password provides the key to access the setup procedure. If the CMOS becomes invalid, bsetup displays a "corrupted password" message and disables the password, allowing the user to directly access setup.

If a wrong password is entered, the program ends returning to the DOS prompt. Notice that the password protects only the DL9600 terminal parameters, not the terminal itself.

The password can be disabled by entering a null string.

3.4 THE SETUP MENU AND ITS CONFIGURABLE ITEMS

The actual items present in the BSETUP menus depend on the BSETUP.BIN file and the BIOS version. If the BSETUP.BIN does not match with the BIOS version, BSETUP.EXE will produce an error message.

The setup menu is composed of several pages, every page contains a list of items and every item corresponds to a terminal parameter. There is also an exit page that allows you to save or discard the modifications.

Every page has its own title, written in the upper row of the screen. Every item has a title and a value (the current value). The title is written on the left, the value on the right. The current item is characterized by a dot between the title and the value.

You can navigate through pages, move between items and modify them. You can recognize two types of parameters: valued and ranged. With the ranged parameters, you must enter a valid value. Erroneous values are recognized, and you must re-enter a correct number. Erroneous values cannot be introduced with valued parameters because you can only select from the ones shown.

3.5 CHANGING THE VALUES OF THE MENU ITEMS

To change the values of the menu items, you must use the DL9600 terminal keyboard. To change an item, first go to its page and then select it by moving the dot.

To change the value of the items, you will have to use the keys indicated in the table below.

KEY	FUNCTION
[ESC]	Activates the exit page
Right Arrow	Next page
Left Arrow	Previous page
Down Arrow	Next item
Up Arrow	Previous item
[ENTER]	Valued items: change value cycling through the valid ones Ranged items: enter and exit the modifying mode

3.6 STRUCTURE OF THE DL9600 SETUP PAGES

The tables below describe the SETUP pages which are available as well as the SETUP items relating to each page.

In the VALUES column, an asterisk or a value in parenthesis indicates the default value.

3.6.1 Console

ITEM	VALUES	DESCRIPTION	NOTES
Scroll	Fixed Virt (*) Track Software	Scrolling mode	See description below the table for further information
Bklight tout	5s 10s 15s 20s 25s 30s Disable (*)	Timeout (in seconds) for the backlight	
Key autorep	Enable (*) Disable	Automatic repetition of the keys by keeping them pressed	
Kbd click	Enable (*) Disable	Keyboard click	
Click freq.	Ranged: 1..100 (Default 3)	Frequency (steps of 100 Hertz) of the keyboard click	
Green LED (kybd. status/ batt. low)	User Alpha (*) Scroll	LED management	See description on next page.
Password	String up to 8 characters	Selection of the new password to enter setup	Simply press [ENTER] to disable the password

Scrolling Mode

The DL9600 has a CGA compatible display adapter and allows the application to write on a virtual 25 lines by 80 columns display. On the other hand, the user can see only a portion of this virtual display at a time, which we call the physical display.
The "scroll" parameter controls which portion of the virtual display is seen by the user.

Fixed — the physical display follows the cursor vertically, long lines are automatically wrapped. The keyboard has no effect on the physical display position.

Virt — the physical display follows the cursor vertically; by enabling the "scroll control" mode the arrows allow both a vertical and horizontal scroll of the logical display.

Track — the physical display follows the cursor both vertically and horizontally; by enabling the "scroll control" mode the arrows allow both a vertical and horizontal scroll of the logical display.

Software — the physical display position is fixed. It can be moved only by the application software (see par. 4.3 and par. 4.4).

NOTE

The "scroll control" mode is not the same as the scroll parameter and is not selected in BSETUP but using the keyboard sequence described in pars. 4.3.2 and 4.4.2.

Keyboard Status/Battery Low LED

This is a bi-colored LED. The red color always signals a low battery condition while the meaning of the green color can be selected as follows:

The "User" value causes the green LED to be managed by the application program.

The "Alpha" value causes the green LED to be lit when the keyboard is in Alpha mode (32-key keyboard models).

The "Scroll" value causes the green LED to be lit when the keyboard is in "scroll control" mode.

3.6.2 Devices

ITEM	VALUES	DESCRIPTION	NOTES
CPU high	8 MHz 16 MHz (*) 32 MHz	Clock frequency in ON state	See description of Power Management for further information
Com 1	Elect+wake (*) Optical Off Electrical	Select type and use of COM1	
Keyboard	On (*) Wakeup	Enable/disable keyboard as a wakeup source	
RTC alarm	On Wakeup (*)	Enable/disable the RTC Alarm as a wakeup source	
PCMCIA	Disabled Enabled Wake Up Always On (*)	Use of radio frequency module	

PCMCIA

The "Disabled" value causes the PCMCIA to be always disabled.

The "Enabled" value causes the PCMCIA to be powered when the terminal is ON.

The "Wake Up" value causes the PCMCIA to be powered when the terminal is ON or SUSPENDED. It wakes the terminal when it detects traffic on the radio network.

The "Always On" (*) value causes the PCMCIA to be powered when the terminal is ON or SUSPENDED. This selection speeds up the terminal transition from SUSPEND to ON.

3.6.3 Power

ITEM	VALUES	DESCRIPTION
Automatic	On (*) Off	Enable automatic power management
Low speed	1 MHz (*) 2 MHz 4 MHz 8 MHz	Clock frequency in IDLE state
High->low tout	1/8 s (*) 1/4 s 1/2 s 1 s 4 s 8 s 16 s	Select the period without Primary activity (see Activities) before passing from High speed to Low speed
Low->sleep tout	8s 16 s 32 s 1 m (*) 4 m 8 m 16 m	Select the period without any activity before passing from the Low speed to SUSPEND.
Sleep->off tout	Disabled 1 m 8 m 16 m 32 m 1 h (*) 2 h 4 h	Select the period without any activity before passing from SUSPEND to OFF.

Automatic

If the Automatic parameter is OFF, all other Power Management parameters have no meaning.
When the Automatic parameter is ON, the Power Management proceeds as follows:

- after the high-low tout expires, the CPU automatically reduces its clock frequency and passes from High speed to Low speed
- once the CPU is in Low speed and no activity occurs, (sleep tout expires), it enters the SUSPEND state. The CPU resumes operations when a WAKEUP event occurs, or when the ON/OFF key or trigger are pressed.
- When the CPU is in SUSPEND and no WAKEUP event occurs, (off timeout expires), it enters the OFF state through which all peripherals are disabled. The CPU resumes operation only when pressing the ON/OFF key or trigger.

3.6.4 Activities

The primary activities cause the CPU to pass to High speed, while the secondary ones allow the CPU to stay in Low speed if they are already in this state (see par. 3.6.3).

ITEM	VALUES	DESCRIPTION
Com1	Primary (*) Secondary Off	Indicates the level of activity for the UART/IR interface.
LCD	Primary (*) Secondary Off	Indicates the level of activity for video operations (excluding cursor blink).
Keyboard	Primary (*) Secondary Off	Indicates the level of activity for the keyboard.
Disk	Primary (*) Secondary Off	Indicates the level of activity for all accesses to the FLASH disk (boot and non-boot).
PCMCIA	Primary (*) Secondary Off	Indicates the level of activity for the radio frequency module.

3.7 EXIT MENU

ITEM	DESCRIPTION	NOTES
CMOS+EEPROM Save & Exit	Saves the new values in the CMOS memory and EEPROM memory and exits.	Press [S] to activate the function.
CMOS Save & Exit	Saves the new values in the CMOS memory and exits.	Press [C] to activate the function.
Discard	Discards the new values and exits.	Press [Q] to activate the function.
Factory parameters	Load the default factory values.	Press [D] to activate the function.

3.8 EXIT FROM THE SETUP PROCEDURE

To end the SETUP procedure, you will have to:

1- Select the Exit menu by pressing [ESC]

2- Select one of the items by pressing the correct key (an erroneous one re-enters the setup procedure):

- If you exit with saving, a message appears notifying that the program is about to quit, and you can choose to reboot the DL9600 terminal to see the effects of the new configuration. Remember that the DL9600 terminal parameters are used by BIOS at boot-time.
- If you exit with the “Discard” command, no change will affect CMOS and EEPROM memories.
- If you choose the “factory parameters”, the application applies it and then re-enters the setup procedure.

4 USE AND FUNCTIONING

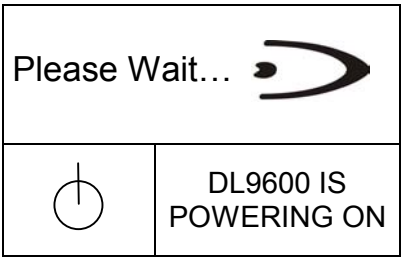
The use of the DL9600 terminal is subordinate to the application software loaded. Once an application is loaded, barcode scanning can be performed by pressing the trigger button.

4.1 TERMINAL STARTUP

The DL9600 terminal turns on when the [ON/OFF] key or trigger is pressed.

For batch models, the prompt is displayed or if present the application program starts.

For radio models, the following popup window is briefly displayed while the radio connects with the base station:



The terminal goes into low power consumption mode (display off), when it is no longer used for more than a programmable timeout (default 1 minute - par. 3.6.3). In this mode it can be awakened (resuming operation) by external events such as trigger press, radio transmission, etc. see par. 3.6.2).

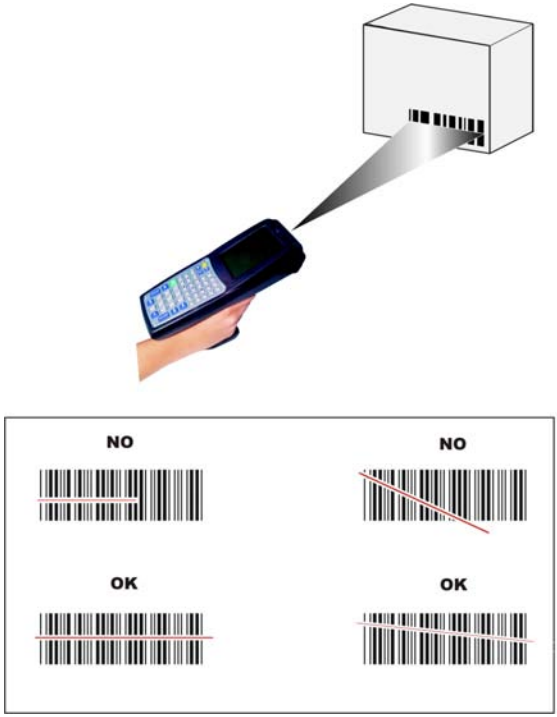
If no external events cause wakeup, after another timeout (default 1 hour - par. 3.6.3) the terminal turns off. Upon pressing the [ON/OFF] key or trigger, the terminal turns on as initially described.

4.2 BARCODE SCANNING

4.2.1 Linear Barcode Scanning

To scan linear barcodes, point the DL9600 terminal laser beam onto the code from a distance within the reading range while pressing the trigger. See the reading diagrams in chapter 6 for the reading range of your model.

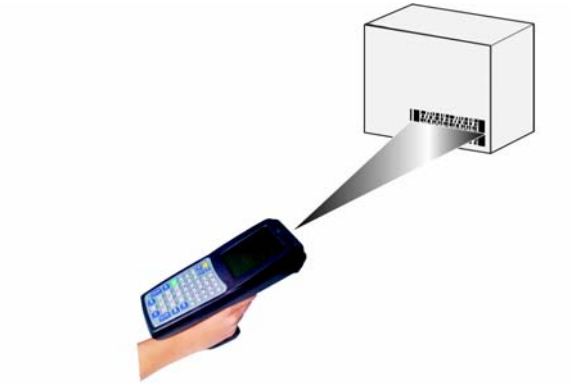
The lighted band emitted by the laser must completely intercept the barcode as shown in the figure below. The Good Read LED and the emission of an acoustic signal - if enabled - will indicate that the scan has taken place correctly.



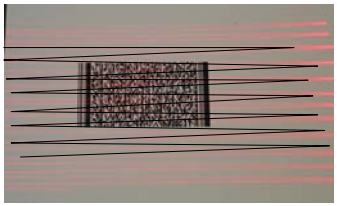
4.2.2 2D Barcode Scanning

To scan 2D barcodes, point the DL9600 terminal laser beam onto the code from a distance within the reading range while pressing the trigger. See the reading diagrams in chapter 6 for the reading range of your model.

The lighted band emitted by the laser must completely intercept the barcode as shown in the figure below.



The terminal automatically recognizes the 2D code and will produce a raster pattern which fully covers the code so that it can be read; therefore you do not have to move the terminal to read the code.



The Good Read LED and the emission of an acoustic signal - if enabled - will indicate that the scan has taken place correctly.

4.3 DESCRIPTION OF THE KEYS (32-KEY MODELS)

This version of the DL9600 terminal provides a keyboard having a total of 32 keys.

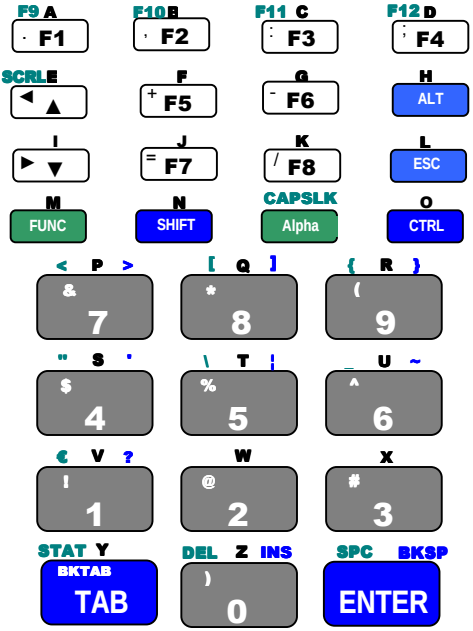
The keyboard can be divided as follows:

4.3.1 Display Control and Power Keys

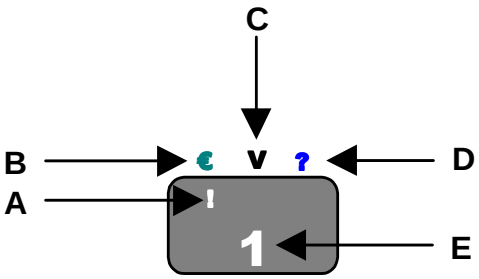
On/Off	Enters or exits the OFF state.
LIGHT	Switch on/off the display backlight.
○	Darkens the display contrast.
●	Lightens the display contrast.

4.3.2 Key Selection

The following image shows the function, numeric and special keys provided on the keyboard:



Some of these keys carry extra symbols and are logically divided in up to 5 sections according to the following figure:



Each section corresponds to a symbol that can be obtained using the corresponding keyboard method according to the following scheme:

A) function of the key when preceded by a SHIFT key press;

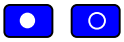
B) function of the key when preceded by a FUNC key press;

C) function of the key when in Alpha mode;

D) function of the key when preceded by a CTRL key press;

E) function of the key when directly pressed.

4.3.3 Special Key Sequences



By pressing these keys and the terminal trigger simultaneously, a system hardware reset is performed.

The behavior of the arrow keys may be overridden by the FUNC - E sequence. This sequence toggles the arrow keys between the standard and the "scroll control" modes. When in standard mode, the arrow keys perform several functions depending on the current application running. When in "scroll control" mode, the arrows allow scrolling the physical display on the virtual one (see par. 3.6.1).

You can enable the green LED on the bottom left position of the screen to signal the keyboard state (see par. 3.6.1).

The ALT key press preceding any keyboard key or key sequence takes the same effect as on a standard PC.
Ex.: ALT - F8 corresponds to ALT - F8 on a PC.

The CTRL key press preceding any keyboard key enables the character positioned on the right upper part above the key.
Ex: CTRL - 6 corresponds to the ˜ character.

The FUNC and SHIFT key press preceding any keyboard key corresponds to the SHIFT + key press on the PC.
Ex.: FUNC - SHIFT - F5 corresponds to SHIFT - F5 on a PC.

The FUNC and CTRL key press preceding any keyboard key corresponds to the CTRL + key press on the PC.
Ex.: FUNC - CTRL - F8 corresponds to CTRL - F8 on a PC.

The SHIFT key press preceding any keyboard key enables the character positioned on the left upper corner of the key.
Ex: SHIFT - 5 corresponds to the % character.

If the CTLPANEL.EXE TSR is run, this sequence activates it by default (see par. 4.5 for details).

The FUNC key press preceding any keyboard key enables the character positioned on the left upper part above the key.
Ex: FUNC - 5 corresponds to the \ character.

The Alpha key press enters a special mode through which it is possible to digit all the alphabetic characters positioned above the keys.
To exit the Alpha mode and return to the keyboard normal functioning it is necessary to press the Alpha key again.

The FUNC key and Alpha key pressed in the stated sequence when not in Alpha mode switch the case of the characters positioned above the keys.
To use the alphabetic characters it is necessary to enter the alpha mode.

NOTE

Once the Alpha mode has been entered, press the Alpha key again to exit this mode. Otherwise, it will not be possible to use other keyboard functions.

4.4 DESCRIPTION OF THE KEYS (48-KEY MODELS)

This version of the DL9600 terminal provides a keyboard having a total of 48 keys.

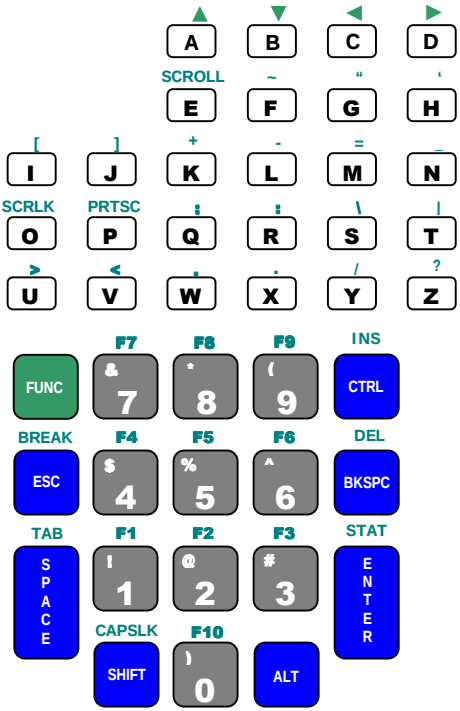
The keyboard can be divided as follows:

4.4.1 Display Control and Power Keys

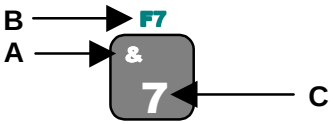
On/Off	Enters or exits the OFF state.
LIGHT	Switches on/off the display backlight.
○	Darkens the display contrast.
●	Lightens the display contrast.

4.4.2 Key Selection

The following image shows the alphabetic, numeric and special keys provided on the keyboard:



Some of these keys carry extra symbols and are logically divided in up to 3 sections according to the following figure:



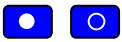
Each section corresponds to a symbol that can be obtained using the corresponding keyboard method according to the following scheme:

A) function of the numeric key when preceded by a SHIFT key press; if pressing an alphabetic key after the SHIFT key, it switches between lower and upper case characters;

B) function of the key when preceded by a FUNC key press;

C) function of the key when directly pressed.

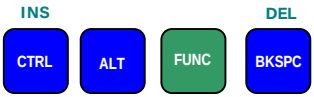
4.4.3 Special Key Sequences



By pressing these keys and the terminal trigger simultaneously, a system hardware reset is performed.

The behavior of the arrow keys may be overridden by the FUNC - E sequence. This sequence toggles the arrow keys between the standard and the "scroll control" modes. When in standard mode, the arrow keys perform several functions depending on the current application running. When in "scroll control" mode, the arrows allow scrolling the physical display on the virtual one (see par. 3.6.1).

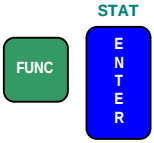
You can enable the green LED on the bottom left position of the screen to signal the keyboard state (see par. 3.6.1).



This sequence of keys performs a software system reset and corresponds to the combination of CTRL, ALT, DEL on the PC. Do not press these keys simultaneously but always in the stated sequence.

The ALT key press preceding any keyboard key or key sequence takes the same effect as on a standard PC.
Ex.: ALT -FUNC - 8 corresponds to ALT - F8 on a PC.

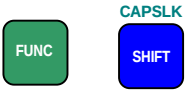
The CTRL key press preceding any keyboard key or key sequence takes the same effect as on a standard PC.
Ex: CTRL - J corresponds to CTRL - J on a PC.



If the CTLPANEL.EXE TSR is run, this sequence activates it by default (see par. 4.5 for details).

On the DL9600, the [SHIFT] key corresponds to the PC one. By pressing it with alphabetic keys it allows switching between upper and lower case characters.
If the SHFT key press precedes another numeric key, it selects the character positioned on the left upper corner of the key.
Ex: SHIFT - A corresponds to SHIFT - A on a PC.
SHIFT - 3 corresponds to #.

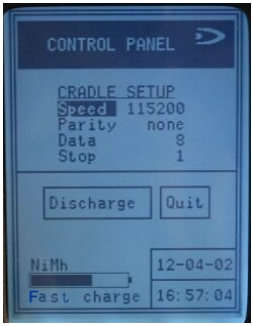
The FUNC key press preceding any keyboard key enables the character displayed above each key. By pressing it with numeric keys it selects the F1-F10 function.
Ex: FUNC - J corresponds to].



If you want to toggle the keyboard case for all the subsequent letters, use the FUNC - SHIFT sequence. The FUNC - SHIFT sequence has no effect on numeric keys.

4.5 CONTROL PANEL

If the CTLPANEL.EXE TSR runs, it is possible to visualize the control panel on the DL9600 display by pressing the FUNC - ENTER sequence (48-Key models) or the FUNC - TAB sequence (32-Key models):



You can manage each item by directly pressing the following keys:

<arrow up>	Previous item
<arrow down> or TAB	Next item
<left arrow>	Previous parameter value
<right arrow> or ENTER	Next parameter value

The "cradle setup" area allows modifying the cradle communication parameters. Every time the DL9600 is inserted into the CC9600 cradle it sends the configuration parameters to the cradle. Then, the CC9600 resets to its default values every time the DL9600 is extracted. It is possible to cause the cradle to ignore the new configuration during the terminal insertion by running the CTLPANEL.EXE with the -I option.

If the terminal is powered by the serial cable or inserted into the cradle, by selecting the virtual "Discharge" button and pressing the ENTER key on the keyboard the discharge cycle starts.

On the lower part of the screen it is possible to view date, time and charger status information. The charger status is shown only if the terminal is powered from the serial cable or inserted into the cradle. The possible values are:

- **Slow charge**: the temperature is too low or high to start the fast charge
- **Fast charge**: the charger is working
- **End charge**: the battery is fully charged and the charger is stopped
- **Discharging**: the battery is being discharged
- **Failure**: signals some battery charging errors

4.6 STATUS INDICATORS

The DL9600 provides three different LEDs and a beeper signaling the terminal status.

LED	STATUS	
Charging status (right side)	Green pulse	it goes on for a few seconds when the external supply or the battery supply has been recognized.
	Green blinking	it blinks during slow charge.
	Green constant	it is constant once the charging process has been completed.
	Red constant	it is constant while charging.
	Green/Red	they turn on alternatively while discharging.
	Orange blinking	it blinks when a charging error has occurred.
Keyboard status/ Battery Low (left-side)	Green constant	it is constant when the keyboard is in "scroll control" or "alpha" mode depending on the setup configuration.
	Red blinking	it blinks when the battery is running down.
Good Read (top)	Green flashing	it flashes as soon as a code has been read.

NOTE

Not all types of battery failures can be signaled by the charging status LED.

BEEPER	STATUS
single beep	insertion into cradle.
double beep	extraction from cradle.
Low High Low*	good read.

* this signal can be modified by the application program.

4.7 FILE TRANSFER

The WinDTP file transfer utility included on the CD-ROM allows you to perform file transfer between the Host and DL9600 Terminal. See the DL-DTP User's Manual for details on installation and functioning.

5 MAINTENANCE

NOTE

Rechargeable battery packs are not initially charged. Therefore the first operation to perform is to charge them. See par. 5.1.

5.1 CHARGING THE BATTERIES

The battery autonomy varies according to factors, such as the frequency of barcode scanning, the RF usage and of BIOS settings.

When the batteries are low, the red LED positioned beneath the left lower corner of the display blinks and a warning acoustic signal is emitted.

It is possible to recharge the batteries by placing the DL9600 in its cradle or by using the DL9600 cable (see par. 2.1.2).

The charging process is signaled by a bi-colored charging status LED positioned beneath the right lower corner of the display (see par. 4.6).

If the battery pack is removed from the terminal, it can be recharged by inserting it into the multicharger or in the recharging slot available in the cradle.

NOTE

If the batteries are new or have not been recharged for a long time, it is necessary to perform two or three charging and discharging cycles (complete use) before they can reach their maximum charge capability.
The maximum time required to recharge a completely run-down battery pack is about 2 hours for NiMh batteries and 5 hours for Li-Ion batteries.

5.2 REPLACING THE BATTERIES

To correctly replace the batteries, proceed as follows.

1- Turn off the DL9600 terminal.

2- Press the lock button as indicated in the figure below:

3- Remove the battery pack by pulling down the lower part of the handle:

4- Replace the battery pack, insert and press it back into the handle until the lock button is automatically closed:

CAUTION

Dispose of the old batteries as required by the relevant laws in force.

5.3 CLEANING THE TERMINAL

Periodically clean the DL9600 terminal with a slightly dampened cloth.
Do not use alcohol, corrosive products or solvents.

6 TECHNICAL FEATURES

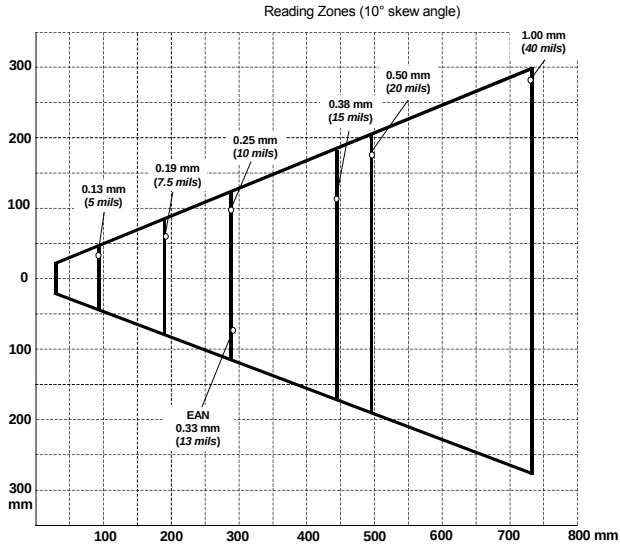
6.1 TECHNICAL DATA

	DL9600 Std	DL9600 LR	DL9600 2D
Optical Features			
Maximum resolution	0.13 mm / 5 mils	0.25 mm / 10 mils	0.17 mm / 6.6 mils
Skew angle	± 55 °	± 60°	± 30°
Pitch angle	± 65°	± 65°	± 15°
Scan rate - horizontal	35 ± 5 scan/sec	35 ± 5 scan/sec	295 ± 5 scan/sec
Scan rate - vertical			10 ± 2 scan/sec
Depth of field	See reading diagrams on the next page		
Light source laser scanner	VLD, wavelength 630~680 nm		
Safety class	Class II EN 60825-1/CDHR		
Electrical Features			
Power			
DC supply	14 Vdc ± 5%		
Battery pack	2 cell Li-Ion 1800 mAh@ 7.2 V (nominal), or 6 cell NiMh 1000 mAh@ 7.2 V (nominal)		
Internal backup battery	Vanadium pentoxide lithium rechargeable 50 mAh 24-28 hour battery duration		
Hardware Features			
FLASH	2, 8, or 16 MB		
RAM	2 or 8 MB		
EEPROM	256 bytes		
Microprocessor	32 bit - AMD486		
Calendar/clock	Quartz RTC, time and date programmable with automatic management of leap years		
Mechanical Features			
Dimensions (LxWxH)	23.5 x 10.5 x 18 cm / 9.25 x 4.13 x 7.08 in		
Weight	768 g / 27.1 oz (with Li-Ion) 795 g / 28 oz (with Li-Ion and PC card) 799 g / 28.1 oz (with NiMh) 826 g / 29.1 (with NiMh and PC card)		
Buzzer	2 piezoelectric buzzers		
LED	Keyboard Status/Battery low (two-color LED) Charging Status (two-color LED) Good Read (green LED)		
Display	High contrast display, graphic LCD with 320 x 240 pixel resolution, backlight		
Keyboard	32 silicone covered rubber keys 48 silicone covered rubber keys		

Environmental Features	
Working temperature	-20° to +50 °C / -4° to 122 °F
Storage temperature	-20° to +70 °C / -4° to 158 °F
Humidity	90% non condensing
Protection	IP65
ESD protection	4 KV contact discharge, 8 KV air discharge
Drop resistance	1.8 m / 5.9 ft
Programming Features	
Operating system	MS-DOS 6.22
RF terminal emulation	VT100, VT220, IBM5250, HP700, 3270
Decoded barcodes - laser 1D	EAN/UPC; Code 39; 2/5 Codes; Plessey; Codabar; Code 128; MSI; Code 93; Code 11
Communication Features	
Optical interface	IrDA 1.0
CC9600 interface	Cradle-terminal interface via IrDA
Serial interface	RS232
RF Communication Features	
Frequency	2.4 GHz spread spectrum
Power output	In compliance with ETS 300-328

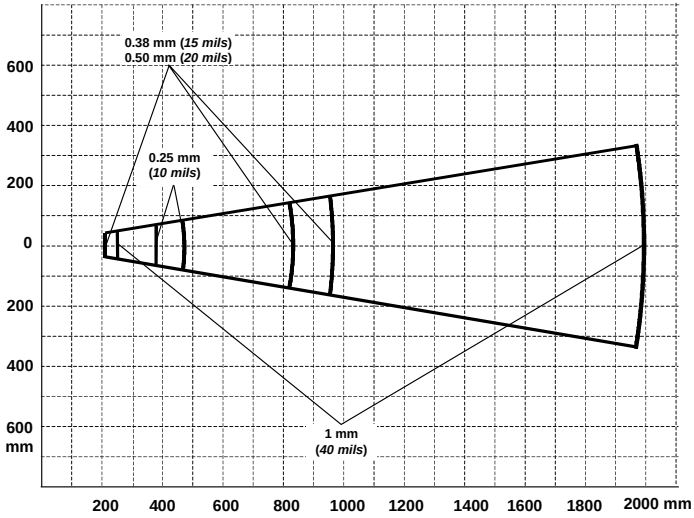
6.2 READING DIAGRAMS

Standard



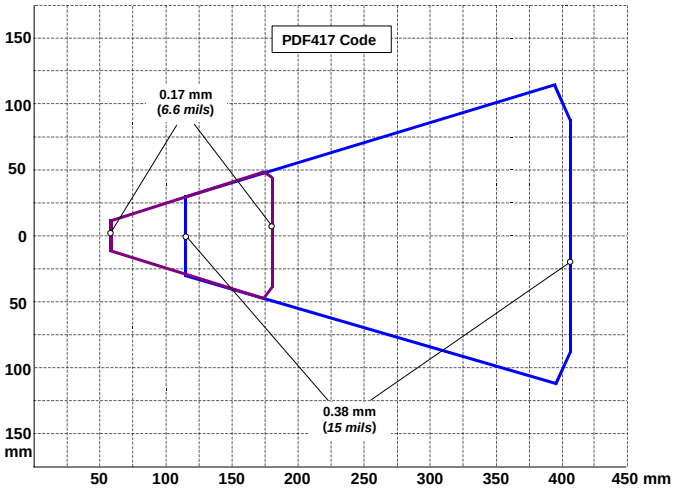
Long Range

Reading Zones (10° skew angle)



2D

Reading Zones (10° skew angle)



GLOSSARY

Access Point

A device that provides transparent access between Ethernet wired networks and IEEE 802.11 interoperable radio-equipped mobile units (MUs). Datalogic hand-held computers, or other devices equipped with a PCMCIA slot, communicate with wired networks using Access Points (AP). The mobile unit may roam among the APs in the same subnet while maintaining a continuous, seamless connection to the wired network.

Bar Code

A pattern of variable-width bars and spaces which represents numeric or alphanumeric data in machine-readable form. The general format of a bar code symbol consists of a leading margin, start character, data or message character, check character (if any), stop character, and trailing margin. Within this framework, each recognizable symbology uses its own unique format.

Baud Rate

A measure for data transmission speed.

BIOS

Basic Input Output System. A collection of ROM-based code with a standard API used to interface with standard PC hardware.

Bit

Binary digit. One bit is the basic unit of binary information. Generally, eight consecutive bits compose one byte of data. The pattern of 0 and 1 values within the byte determines its meaning.

Bits per Second (bps)

Number of bits transmitted or received per second.

Byte

On an addressable boundary, eight adjacent binary digits (0 and 1) combined in a pattern to represent a specific character or numeric value. Bits are numbered from the right, 0 through 7, with bit 0 the low-order bit. One byte in memory can be used to store one ASCII character.

Data Communications Equipment (DCE)

A device such as a modem that is designed to attach directly to a DTE (Data Terminal Equipment) device.

Data Terminal Equipment

A device such as a terminal or printer that is designed to attach directly to a DCE (Data Communications Equipment) device.

Decode

To recognize a bar code symbology *(e.g.,* Codabar, Code 128, Code 3 of 9, UPC/EAN, etc.) and analyze the content of the bar code scanned.

DOS

Disk Operating System. This is basic software that allows you to load and use software applications on your computer.

EEPROM

Electrically Erasable Programmable Read-Only Memory. An on-board non-volatile memory chip.

Flash Disk

Non-volatile memory for storing application and configuration files.

Host

A computer that serves other terminals in a network, providing services such as network control, database access, special programs, supervisory programs, or programming languages.

Liquid Crystal Display (LCD)

A display that uses liquid crystal sealed between two glass plates. The crystals are excited by precise electrical charges, causing them to reflect light outside according to their bias. They use little electricity and react relatively quickly. They require external light to reflect their information to the user.

Light Emitting Diode (LED)

A low power electronic light source commonly used as an indicator light. It uses less power than an incandescent light bulb but more than a Liquid Crystal Display (LCD).

RAM

Random Access Memory. Data in RAM can be accessed in random order, and quickly written and read.

RF

Radio Frequency.

Terminal

A Datalogic portable computer product.

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Bologna - Italy

CE

dichiara che
declares that the
déclare que le
bescheinigt, daß das Gerät
declare que el

DL9600, Pistol Grip Terminal
DL9600/RR, Pistol Grip Terminal e tutti i suoi modelli
and all its models
et tous ses modèles
und seine modelle
y todos sus modelos

sono conformi alle Direttive del Consiglio Europeo sottoelencate:
are in conformity with the requirements of the European Council Directives listed below:
sont conformes aux spécifications des Directives de l'Union Européenne ci-dessous:
den nachstehenden angeführten Direktiven des Europäischen Rats:
cumple con los requisitos de las Directivas del Consejo Europeo, según la lista siguiente:

89/336/EEC EMC Directive e / and / et / und / y **92/31/EEC, 93/68/EEC** emendamenti successivi / further amendments / ses successifs amendements / späteren Abänderungen / succesivas enmiendas

Basate sulle legislazioni degli Stati membri in relazione alla compatibilità elettromagnetica ed alla sicurezza dei prodotti.
On the approximation of the laws of Member States relating to electromagnetic compatibility and product safety.
Basées sur la législation des Etates membres relative à la compatibilité électromagnétique et à la sécurité des produits.
Über die Annäherung der Gesetze der Mitgliedsstaaten in bezug auf elektromagnetische Verträglichkeit und Produktsicherheit entsprechen.
Basado en la aproximación de las leyes de los Países Miembros respecto a la compatibilidad electromagnética y las Medidas de seguridad relativas al producto.

Questa dichiarazione è basata sulla conformità dei prodotti alle norme seguenti:
This declaration is based upon compliance of the products to the following standards:
Cette déclaration repose sur la conformité des produits aux normes suivantes:
Diese Erklärung basiert darauf, daß das Produkt den folgenden Normen entspricht:
Esta declaración se basa en el cumplimiento de los productos con las siguientes normas:

EN 55022, August 1994: LIMITS AND METHODS OF MEASUREMENTS OF RADIO DISTURBANCE CHARACTERISTICS OF INFORMATION TECHNOLOGY EQUIPMENT (ITE)

EN 61000-6-2, April 1999: ELECTROMAGNETIC COMPATIBILITY (EMC). PART 6-2: GENERIC STANDARDS - IMMUNITY FOR INDUSTRIAL ENVIRONMENTS

Lippo di Calderara, 11/07/2003

Ruggero Cacioppo
Quality Assurance Laboratory Manager

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CE 03

dichiara che
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declare que el

DL9600/RF-1, Pistol Grip Terminal
DL9600/RF-2, Pistol Grip Terminal
DL9600/RF-3, Pistol Grip Terminal
DL9600/RF-4, Pistol Grip Terminal

e tutti i suoi modelli
and all its models
et tous ses modèles
und seine modelle
y todos sus modelos

sono conformi alla Direttiva del Consiglio Europeo sottoelencata:
are in conformity with the requirements of the European Council Directive listed below:
sont conformes aux spécifications de la Directive de l'Union Européenne ci-dessous:
der nachstehenden angeführten Direktive des Europäischen Rats entsprechen:
cumple con los requisitos de la Directiva del Consejo Europeo, según la lista siguiente:

1999/5/EEC R&TTE

Questa dichiarazione è basata sulla conformità dei prodotti alle norme seguenti:
This declaration is based upon compliance of the products to the following standards:
Cette déclaration repose sur la conformité des produits aux normes suivantes:
Diese Erklärung basiert darauf, daß das Produkt den folgenden Normen entspricht:
Esta declaración se basa en el cumplimiento de los productos con las siguientes normas:

EN 60950-1, December 2001: INFORMATION TECHNOLOGY EQUIPMENT – SAFETY – PART 1: GENERAL REQUIREMENTS

ETSI EN 300 328-2, December 2001: ELECTROMAGNETIC COMPATIBILITY AND RADIO SPECTRUM MATTERS (ERM); WIDEBAND TRANSMISSION SYSTEMS; DATA TRANSMISSION EQUIPMENT OPERATING IN THE 2,4 GHZ ISM BAND AND USING SPREAD SPECTRUM MODULATION TECHNIQUES; PART 2: HARMONIZED EN COVERING ESSENTIAL REQUIREMENTS UNDER ARTICLE 3.2 OF THE R & TTE DIRECTIVE

ETSI EN 301 489-17, September 2000: ELECTROMAGNETIC COMPATIBILITY AND RADIO SPECTRUM MATTERS (ERM); ELECTROMAGNETIC COMPATIBILTY (EMC) STANDARD FOR RADIO EQUIPMENT AND SERVICES; PART 17: SPECIFIC CONDITIONS FOR WIDEBAND DATA AND HIPERLAN EQUIPMENT

Lippo di Calderara, 26/08/2003

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